

Smart Clock Ethernet Board Installation, Operation and Maintenance



Made in the
United States of America



Figure 1. Smart Clock [50320](#) Ethernet Board

Description

The Smart Clock [50320](#) Ethernet Board allows the Smart Clock to communicate over a TCP / IP network connection. This compact unit is designed to be mounted inside the Smart Clock's steel backplate and is hidden from view behind the Smart Clock.

Note #1: This technical bulletin is intended for users who did not receive their Ethernet Board mounted on the Smart Clock's steel backplate. If your Ethernet Board was packaged with your Smart Clock's steel backplate, please view Technical Bulletin [TB-6800](#).

Note #2: If your Smart Clock has a 15 pin serial port located at the bottom of the unit, the circuit board revision must be no older than 08/21/96 in order for this Ethernet Board to work. The revision date can be found on the circuit board nearby the 15 pin serial port. Contact customer service for more information.

Packaging

- 1 Ethernet Board
- 2 Screws
- 1 RS-232 Cable

Features and Components

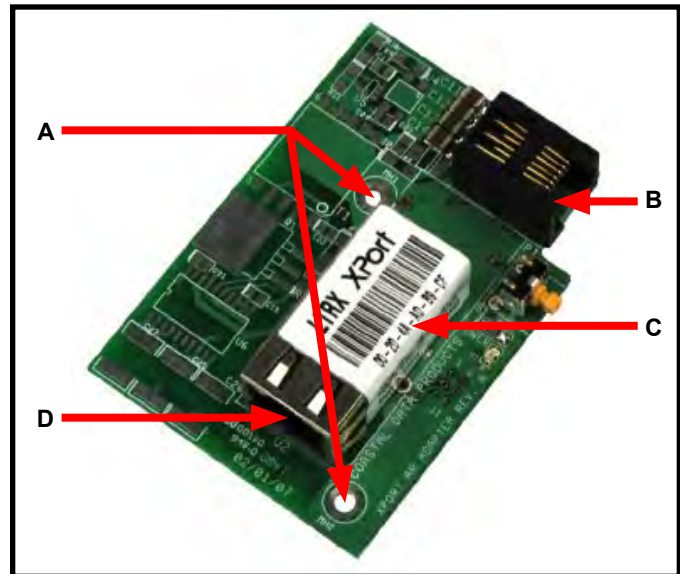


Figure 2. Smart Clock Ethernet Board features and components

A. Mounting Holes: Insert the 2 included screws here to mount the Ethernet Board to the Smart Clock's steel backplate.

B. RS-232 Communication Interface: Use the included RS-232 cable to connect the Ethernet Board to the Smart Clock.

C. Hardware Address: Use to distinguish and locate a given Ethernet Board on a network. All hardware addresses are written in a 00-20-4A-XX-XX-XX format.

D. Ethernet Jack: Connect the Ethernet cable from your network into this jack.

Installation

MOUNTING AND CONNECTIONS

1. Disconnect the electrical power to the Smart Clock.
2. Remove the Smart Clock from the steel backplate by removing the screw located at the bottom of the unit.
3. Mount the Ethernet Board to the Smart Clock's steel backplate using the two included screws (see Figure 3). Do not over tighten as this may damage the board.

If your backplate does not have stand-offs, you may affix the Ethernet Board with double-sided tape.



Figure 3. Connecting the Ethernet Board to the Smart Clock

4. Insert one end of the included RS-232 cable into the RS-232 jack located on the Ethernet Board and the other end into the RS-232 jack located on the back of the Smart Clock (see Figure 3).
5. Insert an active ethernet cable into the Ethernet jack located on the Ethernet Board.
6. Power the Smart Clock by connecting its electrical power supply. Once powered, a red LED located on the Ethernet Board should illuminate.
7. Re-secure the Smart Clock to the steel backplate.

IP ADDRESS CONFIGURATION

Smart Clock Ethernet Boards are shipped with a default IP address of 0.0.0.0 which automatically enables DHCP with the unit. If there is a DHCP server on your network, the board will be able to pick up an IP address, gateway address and subnet mask when it boots up.

LANTRONIX DeviceInstaller

The Lantronix DeviceInstaller program allows the user to locate and configure the Ethernet Board's IP address on a given network. This program can be downloaded and installed from the SmartClock.com website.

1. Open the Lantronix DeviceInstaller program. The home screen will open (see Figure 4).

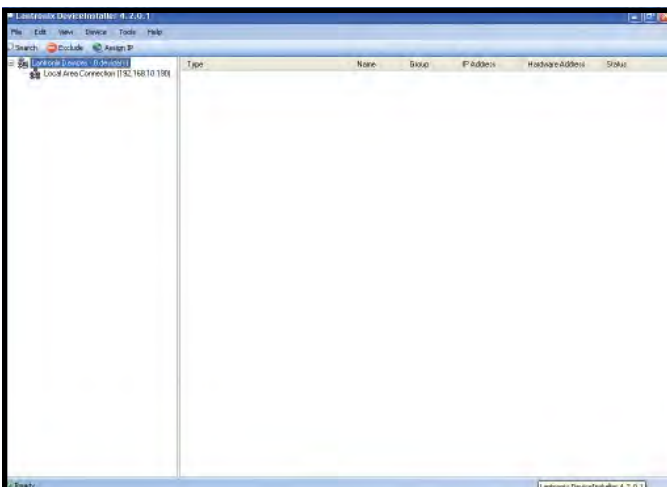


Figure 4. DeviceInstaller home screen

2. Click on the "Search" button located at the top of the window.
3. After a few moments, "XPort-03" should appear on the screen along with its assigned IP address and designated hardware address (see Figure 5). If it does not appear, check all connections from the Ethernet Board to the Smart Clock and verify that both are powered.

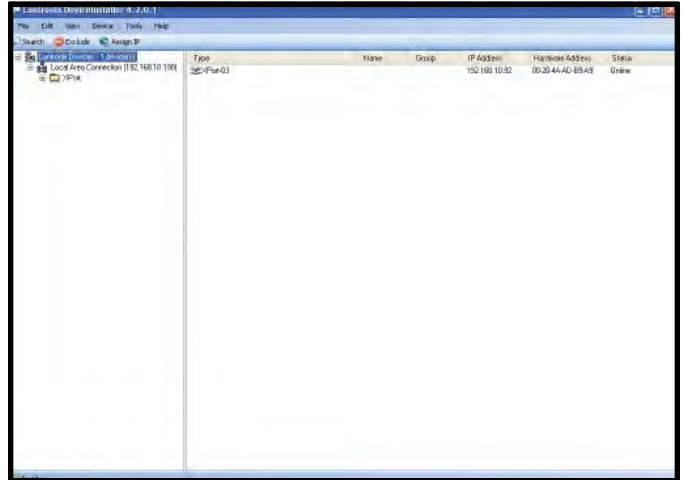


Figure 5. DeviceInstaller search results

Note: DeviceInstaller cannot locate Smart Clock Ethernet Boards across different subnets. Either the Ethernet Board must be on the same subnet for configuration purposes or DeviceInstaller must be installed on a computer connected to that subnet. The Out-of-the-Box™ program is not required to configure the Ethernet Board, so it does not have to be installed on the other subnet.

4. If you would like to assign your own IP address to the Ethernet Board, continue to steps 5 - 9. If you would like to keep the current IP address, please skip to the "PING DEVICE" section on page 4.

ASSIGNING A CUSTOM IP ADDRESS

5. Click on the "Assign IP" button located at the top of the window. The "Assign IP Address" window will open (see Figure 6).

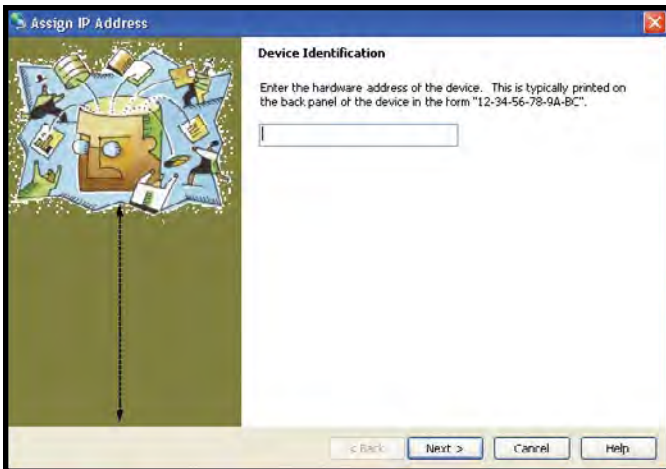


Figure 6. Assign IP Address, Device Identification Window

6. Type in your Ethernet Board's hardware address then click on the "Next >" button.
7. Select "Assign a specific IP address" then click on the "Next >" button (see Figure 7).

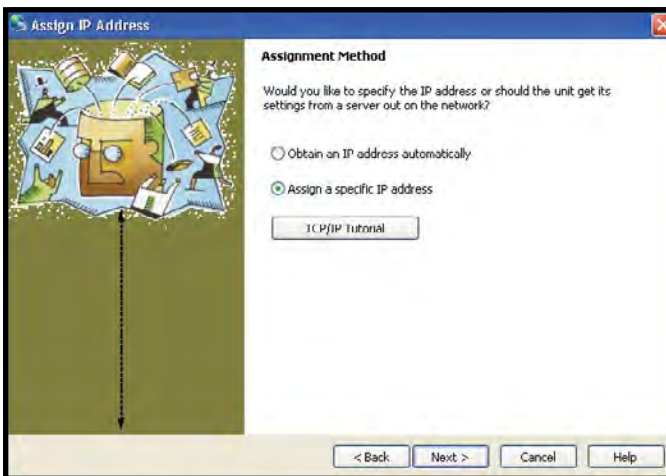


Figure 7. Assign IP Address, Assignment Method window

8. Enter the IP address and Subnet mask. The Default gateway is optional. Click "Next >" when complete (see Figure 8).

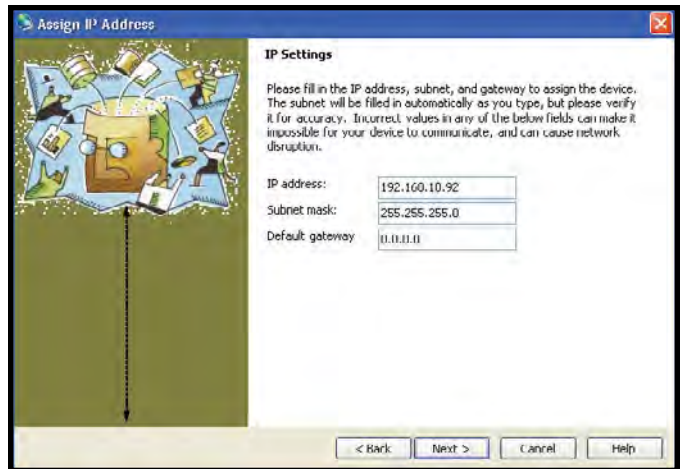


Figure 8. Assign IP Address, IP Settings window

9. Click "Assign" (see Figure 9). DeviceInstaller will then configure the Ethernet Board. Click "Finish" when complete. If successful, skip to the "PING DEVICE" section of this procedure.

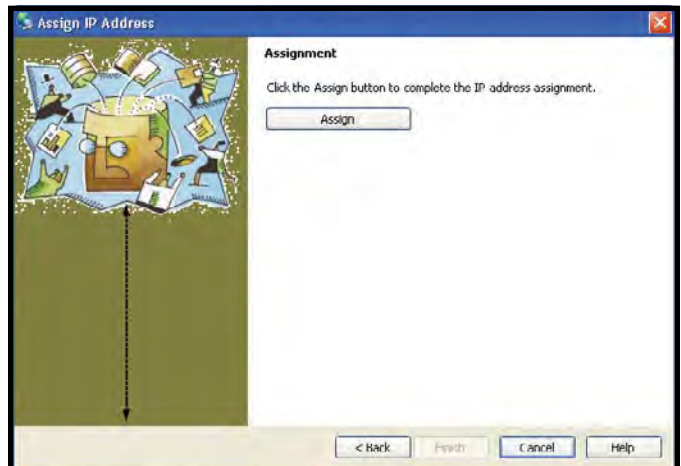


Figure 9. Assign IP Address, Assignment window

If unsuccessful, the user may follow the ARP Procedure to assign the IP address.

ARP PROCEDURE

1. Open the Windows command prompt by clicking "Start" > "Run..." and entering "CMD" in the prompt.
2. From the DOS command prompt, enter the IP address and MAC address as shown below:
ARP-S 192.168.xxx.xxx 00-20-4A-xx-xx-xx
3. Press the ENTER key
4. At the next command prompt, telnet to the same IP address using port 1:
Telnet 192.168.xxx.xxx 1
5. Press the ENTER key. The message 'failed to connect' should appear within 2 to 3 seconds.

6. At the next command prompt, telnet to the same IP address using port 9999:
Telnet 192.168.xxx.xxx 9999
7. Press the ENTER key. You will be prompted to “Press Enter to go into Setup Mode”.
8. Press the ENTER key to access the configuration choices.
9. Select 0 for server configuration.
10. Manually enter the IP address. This permanently assigns the IP address.
11. Manually enter the gateway address (optional).
12. Manually enter the subnet mask.
13. Select 9 to save and exit. If the IP address does not change, please contact technical support.

PING DEVICE

1. Verify proper communication to the Ethernet Board by clicking “Tools” then “Ping” located at the top of the window (see Figure 10).

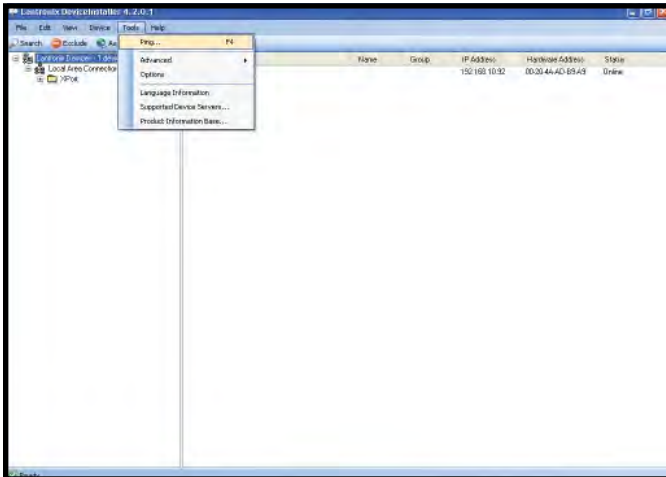


Figure 10. Selecting the Ping command

2. If the Ping is successful the “Ping Device” window will display four “Reply from” messages (see Figure 11). If you do not receive these four messages, proper communication was not established. Make sure that the Ethernet Board is correctly connected to your network and that the IP address is valid within the network. Click the “Close” button and exit DeviceInstaller. Continue to the “CONFIGURING THE SETTINGS FROM THE WEB BROWSER” procedure.

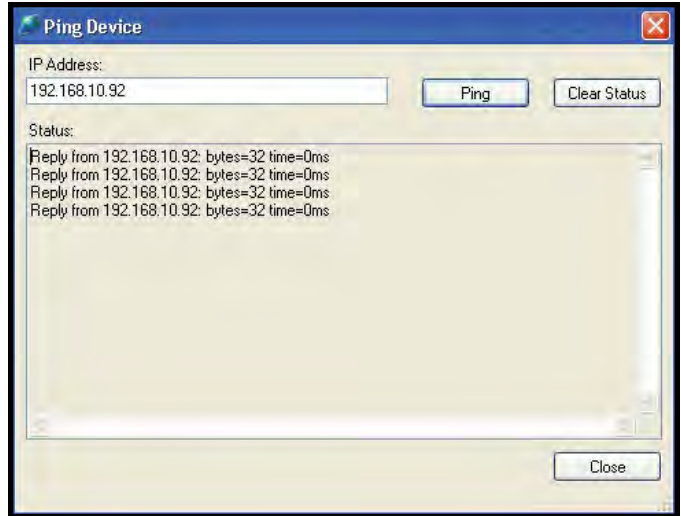


Figure 11. Ping Device window

CONFIGURING THE SETTINGS FROM THE WEB BROWSER

1. Open your computer’s web browser and type in the Ethernet Board’s IP Address into the address field. Hit the Enter key.
2. A prompt will appear (see Figure 12). Click the “OK” button without entering a User Name or Password. A User Name and Password may be created later to prevent unauthorized access to the Ethernet Board’s settings.



Figure 12. User name and Password prompt

- The configuration web page will open. Click on the “Channel 1 Serial Settings” link located in the left-hand margin (see Figure 13).

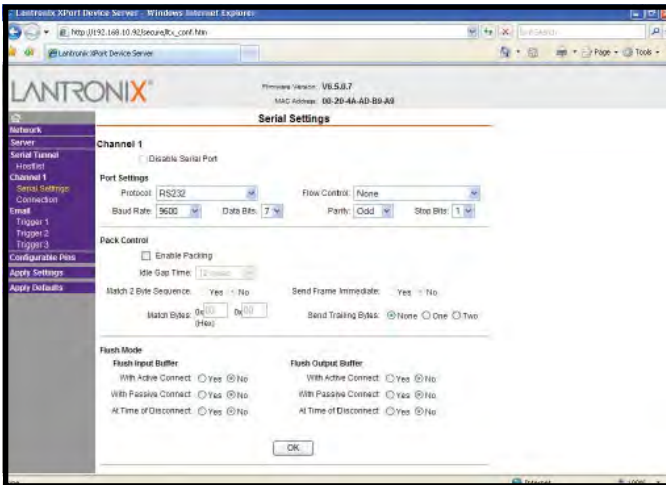


Figure 13. Channel 1 Serial Settings

- Configure the fields to the following settings:

Baud Rate: 9600
 Data Bits: 7
 Parity: Odd
 Stop Bits: 1
 Flow Control: None

Note: If configuring a Smart Clock with Fingerprint Reader, use the following settings:

Baud Rate: 9600
 Data Bits: 8
 Parity: None
 Stop Bits: 1
 Flow Control: None

Click the “OK” button when complete.

- Click on the “Channel 1 Connection” link located in the left-hand margin (see Figure 14).

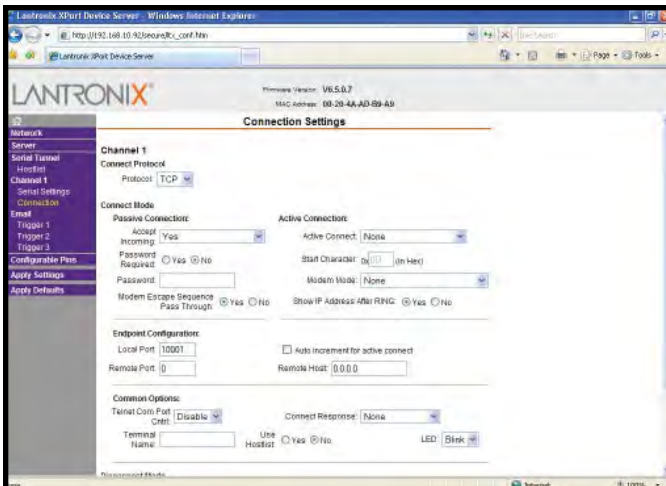


Figure 14. Channel 1 Connection Settings

- Locate the “Endpoint Configuration” section on the page. Set the “Local Port” field to “10001”. Click the “OK” button at the bottom of the page when complete. Click on the “Apply Settings” link located in the left-hand margin then close the web browser after the update is complete. Continue to the “CONFIGURING THE SETTINGS IN THE OUT-OF-THE-BOX™ PROGRAM” procedure.

CONFIGURING THE SETTINGS IN THE OUT-OF-THE-BOX™ PROGRAM

- Open the Out-of-the-Box™ program and click “Browse” > “Smart Clock Configuration” > “Communication Lines” (see Figure 15).

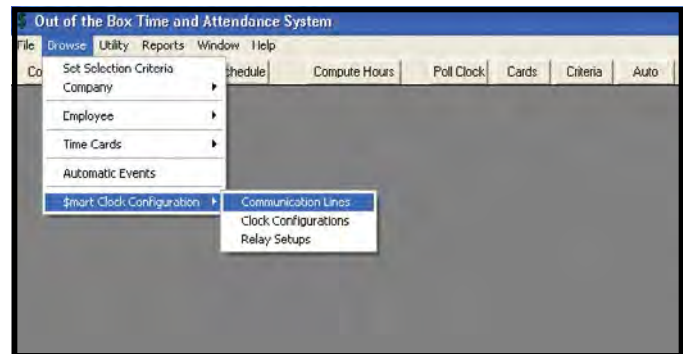


Figure 15. Out-of-the-Box™, Communication Lines

- Click the “Add” button in the “Browse Communication Lines” window (see Figure 16).

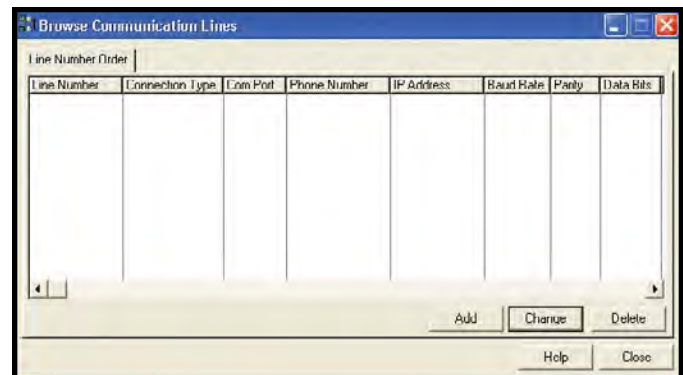


Figure 16. Out-of-the-Box™, Browse Communication Lines window

- The “Adding New Communication Line” window will open. The following fields will have to be configured for Ethernet use (see Figure 17):

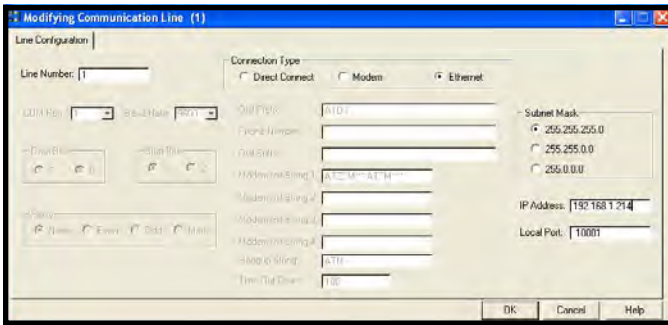


Figure 17. Out-of-the-Box™, Adding New Communication Line window

Line Number: Enter a line number, code or description to identify the line.

Connection Type: Ethernet

Subnet Mask: Select the appropriate subnet mask.

IP Address: Enter the IP address you configured on the Ethernet Board.

Local Port: Enter 10001 as the local port setting.

4. Click the “OK” button when completed, and then close the “Browse Communication Lines” window.
5. Click “Browse” > “Smart Clock Configuration” > “Clock Configurations” (see Figure 18).

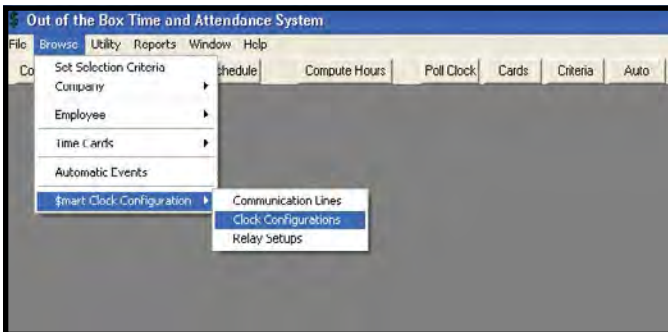


Figure 18. Out-of-the-Box™, Clock Configurations

6. Click the “Add” button in the “Browse Clocks” window (see Figure 19).

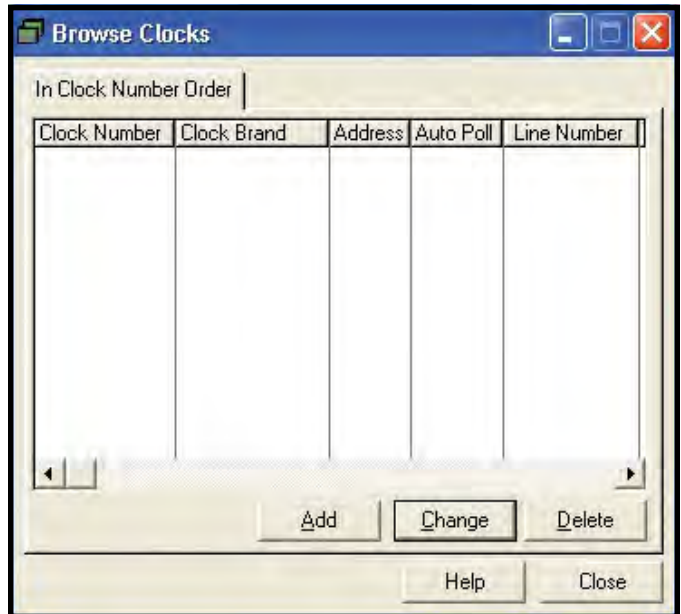


Figure 19. Out-of-the-Box™, Browse Clocks window

7. The “Record Will Be Added (New)” window will open. The following fields will have to be configured for modem use (see Figure 20):

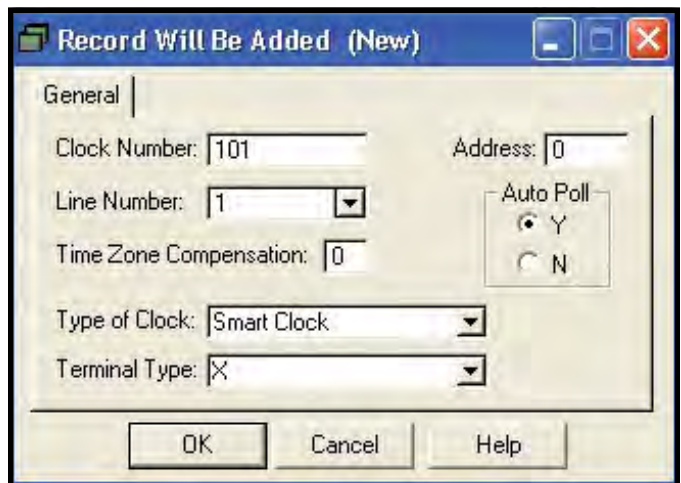


Figure 20. Out-of-the-Box™, Record Will Be Added window

Clock Number: Enter a unique clock number in this field. The default value is 101.

Address: Enter the address of the Smart Clock in this field. The valid addresses are 00-63. The default value is 00.

Note: This setting must match the Clock ID setting in the Smart Clock.

Line Number: Select the communication line number that the program will use to communicate with the corresponding Smart Clock. Click the arrow button on the right side of the field to display a drop-down menu of the available line numbers.

Time Zone Compensation: This feature allows the program to synchronize all of your connected Smart Clocks across multiple time zones.

For example, if your company headquarters is located in Iowa (Central Time Zone), the “Time Zone Compensation” field for your Smart Clocks there will be set to 0. The “Time Zone Compensation” field will be set to -2 for Smart Clocks located in California (Pacific Time Zone) and 1 for Smart Clocks located in New York (Eastern Time Zone).

The value of this field represents the number of hours that will be added to or subtracted from your local time zone when setting the time for other time zones. If you do not have Smart Clocks setup in multiple time zones, set this field to 0.

Auto Poll: Selecting “Y” will include the given Smart Clock when using the automatic poll command. Selecting “N” will remove the given Smart Clock from the automatic poll command. This field also determines whether a Smart Clock will or will not be polled when using the Manual On-Line Data Gathering, Poll Clock, and Perform Clock I/O screens.

Type of Clock: Select “Smart Clock” if you are connecting to a Smart Clock without a fingerprint reader. Select “Smart Clock Bio” if you are connecting to a Smart Clock with Fingerprint Reader.

Terminal Type: This field will automatically configure to “X” when selecting “Smart Clock” in the the “Type of Clock” field above and will configure to “Y” when selecting “Smart Clock Bio”.

8. Click the “OK” button when completed, and then close the “Browse Clocks” window.
9. The communication settings must then be checked via the “Perform Clock I/O” command. Begin by clicking “Utility” > “Perform Clock I/O” (see Figure 21).

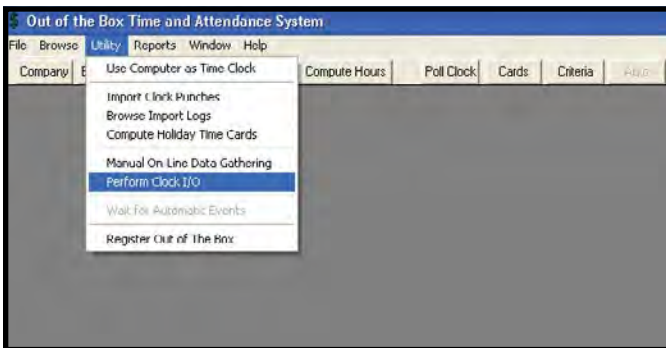


Figure 21. Out-of-the-Box™, Perform Clock I/O

10. The “Clock Interface Control” window will open. Click on the drop down arrow next to the “Clock Number” field to display the list of available clocks to communicate with.
11. Select the clock number that corresponds to your Ethernet connection and click the “Connect” button. If a successful connection to the Smart Clock is established, the buttons in the window should become active (see Figure 22). If the buttons do not become active, review over steps I - XI or contact Technical Support.

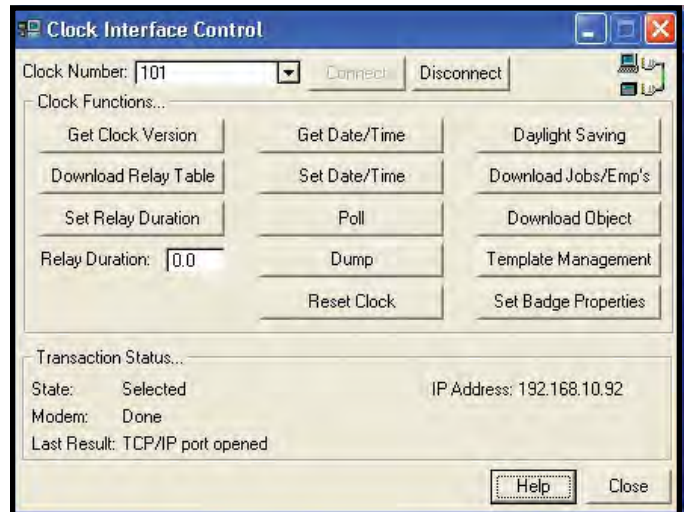


Figure 22. Out-of-the-Box™, Clock Interface window

TECHNICAL SUPPORT

- Find the answers to the most frequently asked technical questions by visiting the Smart Clock FAQ webpage:
SmartClock.com/FAQ.aspx
- Find the latest downloads for your Smart Clock Time and Attendance System by visiting the Smart Clock Downloads webpage:
SmartClock.com/Downloads.aspx
- Find more information on purchasing a Smart Clock Annual Maintenance Agreement by visiting this webpage:
SmartClock.com/pdf/AnnualMaintenanceAgreement.pdf

Limited Warranty

Smart Clock expressly warrants that for a period of 90 days from the date of purchase, Smart Clock products, hardware only, will be free of defects in material (parts) and workmanship (labor). An extended warranty is available for purchase. Within the warranty period, a unit will be tested, repaired or replaced at Smart Clock's option, free of charge. Call our Customer Service Department at 909-664-9980 (Chino, CA) for a Return Material Authorization (RMA) and proper shipping instructions and address. Please include a copy of your original packing slip, invoice, or other proof of date of purchase. Any unit under warranty should be shipped prepaid to the Smart Clock factory. Warranty replacements will take approximately 1 week.

If your unit is out of warranty and you would like to have it extended, call our Customer Service Department at 909-664-9980 (Chino, CA) for a maintenance agreement renewal. If the unit is not under warranty and you would like it repaired, contact the Customer Service Department for a Return Material Authorization (RMA) and proper shipping instructions and address. Smart Clock will quote repair charges necessary to bring your unit up to factory standards.

Warranty Exclusions

THE FOREGOING EXPRESS WARRANTY IS MADE IN LIEU OF ALL OTHER PRODUCT WARRANTIES, EXPRESSED AND IMPLIED, INCLUDING MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE WHICH ARE SPECIFICALLY DISCLAIMED. The express warranty will not apply to defects or damage due to accidents, neglect, misuse, alterations, operator error, or failure to properly maintain, clean or repair products.

Limit of Liability

In no event will Smart Clock or any seller be responsible or liable for any injury, loss or damage, direct or consequential, arising out of the use of or the inability to use the product. Before using, users shall determine the suitability of the product for their intended use, and users assume all risk and liability whatsoever in connection therewith.